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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/692,135	10/19/2000	Roy C. Challberg	24-AT-5990	6878
7590	12/01/2003		EXAMINER	
John S Beulick Armstrong Teasdale LLP One Metropolitan Square Suite 2600 St Louis, MO 63102-2740			RICHARDSON, JOHN A	
			ART UNIT	PAPER NUMBER
			3641	
DATE MAILED: 12/01/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/692,135

licant(s)

CHALLBERG, ROY C

Examiner

John Richardson

Art Unit

3641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1) Responsive to communication(s) filed on 25 August 2003.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-3, 9-11 is/are rejected.

7) Claim(s) 4-8 and 12-16 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

1) Notice of References Cited (PTO-892)                    4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_ .

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)                    5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ .                    6) Other: \_\_\_\_\_ .

**DETAILED ACTION**

***Non Final Rejection***

- 1). The applicant's responses in Paper No. 17 is acknowledged and this Office action is a further action on the merits.
- 2). The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3). Claims 1 to 3, 9 to 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carruth (U.S. 4,904,443) in view of Toshiba (JO 2168195).

The primary reference discloses a BWR arrangement comprising, a plurality of fuel assemblies (items 21-24), plurality of control rod guide apertures / tubes (items 50) accommodating a plurality of control rods (items 40), a flat core plate (item 62) supported in the conventional General Electric BWR design (see Figures 2A,B), a plurality of fuel assembly support structures (items 28, Figure 3) extending through the said core plate, a coolant flow inlet, a coolant flow outlet, with the said inlets and outlets off-set with parallel center-lines and the coolant flow outlet sized to receive the said fuel assemblies as shown in Figure 2A, relating to claims 2, 10, the said control apertures / tubes are arranged in a cruciform shape (see Figure 3, item 50, relating to claims 3, 11, the reference discloses coolant orifices (see for example, items 66).

The primary reference discloses the claimed apparatus except for specifically disclosing core plate supports / beams. The secondary reference discloses core plate supports. It would have been obvious to one of ordinary skill in the nuclear fuel art at the time of the invention to have incorporated the Toshiba items 5 (Figure 5) core plate supports to provide support to the core plate of Carruth item 62, as this is conventional practice for BWR nuclear reactor designs.

4). Claims 4-8, 12-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5). The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6). Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Richardson whose telephone number is (703) 305 0764. The examiner can normally be reached on Monday to Thursday from 7.00 AM to 4.30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone, can be reached on (703) 306 4198. The fax phone number for the organization where this application or proceeding is assigned is (703) 305 7687.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 1113.

John Richardson, PE,  
November 14 2003.

MICHAEL J. CARONE  
SUPERVISORY PATENT EXAMINER